



CHEMISTRY NMDCAT

(UNIT-9)

TOPICS:

- ✓ **ALKYL HALIDES**
- ✓ **ALCOHOLS AND PHENOLS**

Q.1 $X + KCN \rightarrow Y \xrightarrow{H^+/OH^-} \text{Butanoic acid}.$

X in above equation

- | | |
|-------------------|--------------------|
| a. Propyl alcohol | b. Butyl chloride |
| c. Butyl alcohol | d. Propyl chloride |

Q.2 Phenol does not evolve CO_2 from $NaHCO_3$ like carboxylic acids because

- Phenol is stronger acid than carboxylic acid
- Phenol is stronger acid than carbonic acid
- Phenol is weaker acid than carboxylic acid
- Phenol is aromatic in nature

Q.3 An organic compound, "A" reacts with PCl_5 to give C_2H_5Cl , identify "A" among the following

- | | |
|---------------|---------------|
| a. C_2H_5Cl | b. C_2H_5F |
| c. C_2H_5OH | d. C_2H_5CN |

Q.4 An alkyl halide reacts with NH_3 to give

- | | |
|------------|------------|
| a. Amide | b. Amine |
| c. Cyanide | d. Aniline |

Q.5 The reaction $C_2H_5Cl + \text{aqueous } KOH \rightarrow C_2H_5OH + KCl$ is

- | | |
|---------------------------|-------------------------------|
| a. Electrophilic addition | b. Electrophilic substitution |
| c. Nucleophilic addition | d. Nucleophilic substitution |

Q.6 The dehydration of neo-pentyl alcohol gives mainly

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|--|---|
| a. $CH_3 - CH_2 - CH = CH_2$ | b. $\begin{array}{c} CH_3 - C = CH - CH_3 \\ \\ CH_3 \end{array}$ |
| c. $\begin{array}{c} CH_3 \\ \\ CH_3 - C - CH = CH_2 \\ \\ CH_3 \end{array}$ | d. Dehydration cannot take place |

Q.7 Which of the following statement is NOT correct about alcohols

- Methanol evaporate quickly
- Alcohols with less number of carbon atoms are less soluble
- Ethanol is weaker acid than water
- Alcohols with less number of carbon atoms are more soluble

Q.8 The most reactive mono-halo derivatives of ethane towards nucleophilic substitution will be

- | | |
|---------------|-----------------------------|
| a. C_2H_5Br | b. C_2H_5Cl |
| c. C_2H_5I | d. All are equally reactive |

Q.9 Methyl alcohol on oxidation with acidified $K_2Cr_2O_7$ gives

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|-----------------|---------------|
| a. CH_3COCH_3 | b. $HCOOH$ |
| c. CH_3CHO | d. CH_3COOH |

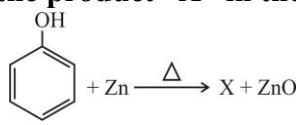
Q.10 46g of Na shall react with methyl alcohol to give

- | | |
|-----------------------|----------------------|
| a. Half mole of H_2 | b. One mole of O_2 |
| c. One mole of H_2 | d. Two mole of H_2 |



- Q.11 Which of the following ketone will not give iodoform test**
 a. Methyl isopropyl ketone b. Dimethyl ketone
 c. Ethyl isopropyl ketone d. 2-hexanone
- Q.12 Which one of the following is more acidic in nature**
 a. Water b. Ethanol
 c. Phenol d. Ammonia
- Q.13 Which of the following is correct for stability of phenoxide ion**
 a. Resonating structure of benzene
 b. Localization of π electrons in phenoxide ion
 c. Delocalization of π electrons in phenoxide ion
 d. All are correct statements
- Q.14 How many π electrons are there in planar ring of phenol**
 a. 4 b. 10
 c. 6 d. 8
- Q.15 The oxidation of which of the following compound gives ketone**
 a. Butan-2-ol b. 2-methyl butan-2-ol
 c. Propan-2-ol d. Both a and c
- Q.16 Which of the following when dissolved in water gives a solution with pH less than 7 at 298 K**
 a. CH_3COCH_3 b. $\text{C}_2\text{H}_5\text{OH}$
 c. $\text{C}_6\text{H}_5\text{OH}$ d. $\text{C}_6\text{H}_5\text{NH}_2$
- Q.17 Alkyl halides can be converted into corresponding alkene in the presence of**
 a. Alcoholic KOH b. Alcoholic KCN
 c. Aqueous NH_3 d. Aqueous KOH
- Q.18 In which of the following reactions ethanol acts as a nucleophile**
 a. Reaction with PCl_5
 b. Reaction with alkaline aqueous iodine
 c. Reaction with $\text{K}_2\text{Cr}_2\text{O}_7$
 d. Reaction with acetic acid in presence of H_2SO_4
- Q.19 Which compound has strongest conjugate base**
 a. Ethanoic acid b. Water
 c. Phenol d. Alcohol
- Q.20 $\text{X} + 3\text{Y} \xrightarrow[\text{Heat}]{\frac{3}{4}, \frac{3}{4}}$ picric acid + $3\text{H}_2\text{O}$, X and Y may be**
 a. Phenol + Liquid bromine b. Phenol + Formaldehyde
 c. Phenol + Conc. Nitric acid d. Benzene + Conc. Nitric acid
- Q.21 The reaction of phenol with bromine is type of**
 a. Nucleophilic addition b. Electrophilic addition
 c. Nucleophilic Substitution d. Electrophilic substitution
- Q.22 IUPAC name of lactic acid**
 a. 2, 3-dihydroxy propanoic acid b. 3-hydroxy propanoic acid
 c. 2, 3-dihydroxy but 1, 4 dioic acid d. 2-hydroxy propanoic acid
- Q.23 Excess of ethyl bromide with NH_3 form**
 a. Primary amine b. Secondary amine
 c. Tertiary amine d. Quaternary amine
- Q.24 Phenol reacts with dilute HNO_3 to produce**
 a. o-Nitrophenol b. Picric acid
 c. p-Nitrophenol d. Both "a" and "c"



- Q.25** The correct order of acidic strength is
 a. $\text{RCOOH} > \text{C}_6\text{H}_5\text{OH} > \text{H}_2\text{O} > \text{ROH}$
 b. $\text{ROH} > \text{H}_2\text{O} > \text{C}_6\text{H}_5\text{OH} > \text{RCOOH}$
 c. $\text{RCOOH} > \text{C}_6\text{H}_5\text{OH} > \text{ROH} > \text{H}_2\text{O}$
 d. $\text{RCOOH} > \text{ROH} > \text{C}_6\text{H}_5\text{OH} > \text{H}_2\text{O}$
- Q.26** $\text{S}_{\text{N}}2$ reaction depends upon
 a. Steric hindrance
 b. Nature of leaving group
 c. Strength of attacking nucleophile
 d. All of these
- Q.27** Ethyl alcohol is heated with conc. H_2SO_4 at 180°C . The product formed
 a. CH_3OCH_3
 b. $\text{C}_2\text{H}_5\text{OCH}_3$
 c. C_2H_4
 d. C_2H_2
- Q.28** 2-Bromo – 2-chloro – 1,1,1-trifluoroethane is commonly known as
 a. TNT
 b. Teflon
 c. Freons
 d. Halothane
- Q.29** The name of the product “X” in the below equation is

 a. Cyclohexane
 b. Phenoxide ion
 c. Cyclohexene
 d. Benzene
- Q.30** Tertiary butyl chloride reacts with aqueous KOH, the product formed contains _____ functional group
 a. $\text{C} = \text{C}$
 b. $-\text{OH}$
 c. $-\text{X}$
 d. $-\text{SH}$
- Q.31** For the following reaction the correct order of reactivity of HX is
 $\text{CH}_3\text{CH}_2\text{OH} + \text{HX} \xrightarrow{\text{ZnCl}_2} \text{CH}_3\text{CH}_2\text{X}$
 a. $\text{HBr} > \text{HI} > \text{HCl}$
 b. $\text{HI} > \text{HBr} > \text{HCl}$
 c. $\text{HI} > \text{HCl} > \text{HBr}$
 d. $\text{HCl} > \text{HBr} > \text{HI}$
- Q.32** For one mole of the following which can produce greater number of moles of ethyl chloride on reacting with excess of ethanol
 a. PCl_5
 b. PCl_3
 c. $\text{HCl} / \text{ZnCl}_2$
 d. SOCl_2
- Q.33** Hydrogen gas is evolved during reaction of Na-metal with all except
 a. Ethyl Chloride
 b. Ethyl Alcohol
 c. Water
 d. Hydrochloric acid
- Q.34** In second step of E1 reaction the base attacks on
 a. Carbocation
 b. β -hydrogen
 c. β -carbon
 d. α -hydrogen
- Q.35** Phenoxide ion is formed from phenol by losing
 a. Electron pair
 b. Hydrogen
 c. Hydroxyl group
 d. Carbon atom
- Q.36** The colour of precipitate of 2, 4, 6-tribromophenol is
 a. Yellow
 b. Orange
 c. Green
 d. White
- Q.37** In ethanol, the bond that undergoes heterolysis during its esterification with CH_3COOH in presence of H_2SO_4 is
 a. $\text{C} - \text{C}$
 b. $\text{O} - \text{H}$
 c. $\text{C} - \text{O}$
 d. $\text{C} - \text{H}$
- Q.38** If 1-chloropropane and 2-chloropropane are treated with alcoholic KOH, it gives
 a. Propane
 b. n-Hexane
 c. Propene
 d. A mixture of propene and propane



- Q.39** Which of the following does not give iodoform on warming with Na_2CO_3 and I_2
- Acetone
 - Isopropyl alcohol
 - Ethyl alcohol
 - n-propyl alcohol
- Q.40** Which one is a good nucleophile as well as a good leaving group
- Cl^-
 - CN^-
 - I^-
 - OH^-
- Q.41** The alkyl halide follows $\text{S}_{\text{N}}1$ mechanism is
- $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$
 - $(\text{CH}_3)_2\text{CHCH}_2\text{Cl}$
 - $\text{CH}_3\text{CH}_2\text{CHClCH}_3$
 - $(\text{CH}_3)_3\text{C}-\text{Cl}$
- Q.42** $\text{X} \xrightarrow[\text{H}_2\text{SO}_4]{\text{K}_2\text{Cr}_2\text{O}_7} \text{CH}_3\text{COCH}_3 \xrightarrow[\text{I}_2/\text{NaOH}]{\text{warm}} \text{CHI}_3$, identify compound "X"
- $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
 - $\text{CH}_3 - \overset{\text{OH}}{\underset{|}{\text{CH}}} - \text{CH}_3$
 - $\text{CH}_3\text{OCH}_2\text{CH}_3$
 - $\text{CH}_3\text{CH}_2\text{OH}$
- Q.43** $\text{C}_2\text{H}_5\text{OH} + \text{PCl}_5 \longrightarrow ?$
- $2\text{C}_2\text{H}_5\text{Cl} + \text{POCl}_3$
 - $3\text{C}_2\text{H}_5\text{Cl} + \text{H}_3\text{PO}_4 + 2\text{HCl}$
 - $2\text{C}_2\text{H}_5\text{Cl} + \text{POCl}_3 + \text{H}_2\text{O}$
 - $\text{C}_2\text{H}_5\text{Cl} + \text{POCl}_3 + \text{HCl}$
- Q.44** Which of the following is easily oxidized to the corresponding carbonyl compound
- Propanone
 - 2-Hydroxypropane
 - 2-Methyl - 2 - hydroxypropane
 - t-Butyl alcohol
- Q.45** The IUPAC name of iodoform is
- Tri-iodomethane
 - Iodoethane
 - Methyl trichloride
 - Methyl iodide
- Q.46** $\text{CH}_3 - \text{CH}(\text{Br}) - \text{CH}_3 + \text{KOH}_{(\text{aq})} \longrightarrow \text{Product}$
- In the above reaction the product form is
- Primary alcohol
 - Secondary alcohol
 - Tertiary alcohol
 - Isobutyl alcohol
- Q.47** Reaction of tertiary alkyl halide with KCN in the presence of alcohol follows
- $\text{S}_{\text{N}}1$ - mechanism
 - E_1 - mechanism
 - $\text{S}_{\text{N}}2$ - mechanism
 - E_2 - mechanism
- Q.48** Which of the following is classified as an alkyl halide
- CH_3Cl
 - CH_2Cl_2
 - CHCl_3
 - CCl_4
- Q.49** The alcohol which can produce iodoform with alkaline aqueous iodine solution
- 2-propanol
 - 2-Methyl - 1 - propanol
 - 2-Methyl - 2 - propanol
 - 1-Propanol
- Q.50** $\text{A} \xrightarrow[\text{H}_2\text{SO}_4]{\text{K}_2\text{Cr}_2\text{O}_7} \text{B} \xrightarrow[\text{Vigorous Oxidation}]{\text{KMnO}_4/\text{H}^+} \text{CH}_3\text{COOH} + \text{HCOOH}$
- If here "B" is propanone so "A" will be
- Ethyl Alcohol
 - n-Propyl alcohol
 - Isopropyl alcohol
 - t-Butyl alcohol

Chemistry

1 D	11 C	21 D	31 B	41 D
2 C	12 C	22 D	32 B	42 B
3 C	13 C	23 D	33 A	43 D
4 B	14 C	24 D	34 B	44 B
5 D	15 D	25 A	35 B	45 A
6 D	16 C	26 D	36 D	46 B
7 B	17 A	27 C	37 B	47 A
8 C	18 D	28 D	38 C	48 A
9 B	19 D	29 D	39 D	49 A
10 C	20 C	30 B	40 C	50 C

Physics

1 B	11 D	21 A	31 B	41 C
2 B	12 C	22 D	32 D	42 D
3 D	13 A	23 C	33 C	43 D
4 C	14 A	24 C	34 C	44 D
5 B	15 A	25 D	35 A	45 A
6 A	16 D	26 B	36 A	46 D
7 B	17 B	27 C	37 A	47 B
8 C	18 A	28 C	38 C	48 B
9 D	19 D	29 C	39 B	49 B
10 A	20 C	30 D	40 C	50 B